DOCUMENT RESUME

ED 232 587 HE 016 511

AUTHOR Russell, Ralph E.; And Others
TITLE The Effect of Major Fields of Study on Student Demand for Library Books. AIR 1983 Annual Forum Paper.
PUB DATE May 83
NOTE 16p.; Paper presented at the Annual Forum of the Association for Institutional Research (23rd, Toronto, Ontario, May 23-26, 1983).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *College Libraries; *Enrollment Trends; Higher Education; Institutional Research; *Intellectual Disciplines; *Library Circulation; *Majors (Students); *Use Studies
IDENTIFIERS *AIR Forum

ABSTRACT

The relationship between student demand for library books by subject area and the students' majors and courses undertaken was studied using a library's automated circulation system. During 1980-1982, book checkout at the university library declined 22 percent. History had the greatest decline in checkouts per student. Other fields with larger enrollments but large declines in library use were: secondary education, educational leadership, English, library science, journalism, nursing, special education, and political science. The greatest declines for subject areas with over 1,000 checkouts were in the areas of political science and education. The subject areas with over 1,000 checkouts were mathematics-computers and criminal justice. Heavy use majors were dominated by the liberal arts, while light use majors were dominated by utilitarian subjects. It is suggested that declines in library book checkouts may be related to a decrease in the number of volumes acquired per year by the university library. Other possible reasons for these declines may include curriculum changes, decreasing print literacy, and the availability of other sources of information (television and computers). (SW)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

THE EFFECT OF MAJOR FIELDS OF STUDY ON STUDENT DEMAND FOR LIBRARY BOOKS

Ralph E. Russell
Joseph S. Sturgeon
James E. Greene, Jr.
James E. Prather

ED232587

HE016511

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

✓ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

AIR

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

THE ASSOCIATION FOR INSTITUTIONAL RESEARCH

This paper was presented at the Twenty-Third Annual Forum of the Association for Institutional Research held at the Sheraton Centre in Toronto, Ontario, May 23-26, 1983. This paper was reviewed by the AIR Forum Publications Committee and was judged to be of high quality and of interest to others concerned with the research of higher education. It has therefore been selected to be included in the ERIC Collection of Forum papers.

D. R. Coleman, Chairman
Forum Publication
Advisory Committee

#34

The Effect of Major Fields of Study on Student Demand for Library Books

Introduction

The classic dilemma posed by rising costs and static income generates considerable impetus for fresh, creative analyses of continuing problems by administrators in colleges and universities. One of those problems is the allocation of scarce resources. Of all higher education components affected by cost inflation, few are more vulnerable than the library--and, in particular, the acquisitions budget of the library. The trend may be characterized by examining price changes over the past six years: the average cost of hard-backed domestic books rose from $19.22 per title in 1977 to $30.49 per title in 1982. That is a 59.2% increase in a six year period. For these same six years, the price of U.S. periodicals increased by 82% (Brown & Phillips, 1982; Publisher's Weekly, 1983). Skyrocketing prices caused dramatic dislocations in acquisitions patterns and library priorities in colleges and universities.

The dilemma posed by rising costs and static income is seldom that of distinguishing between genuine needs and mere wishes. The problem all too frequently is that of assigning priorities among an array of essential documented needs. This array of needs requires judicious insight in allocating the diminishing dollar resources for library acquisitions. University administrators and librarians are concerned that maximum value be derived from library material expenditures and that current purchases meet the most pressing needs.

Gauging the student use of library collections is an important measurement of value received. This statistic can be more helpful when a model relating this use to program enrollment can be constructed. Such a construction allows for the change of variables as situations demand, and can be used to predict the effect of program modification and enrollment fluctuation on library materials use.

Assessments of ever-changing program needs require information about the size of academic programs and their expected expansion or contraction. The academic programs form the guiding structure for the development of library collections and also provide the focus for the development of library services. The "use data" of those services and collections are critical in assessing the efficacy of library administrative policies. If the library is the heart of the institution, is the heart healthy? And, if not, what remedial and restorative efforts are required for it to regain full health?

The purpose of this study is the presentation of a model describing the relationship between students' major fields of study and courses and the student demand for library books by subject area as measured by the library's automated circulation system. A significant feature of this study is determining what books are being used and who is using them. Such a discovery is crucial in the prediction of library use when based on program enrollments.

A secondary issue considered here is the decision of where and how to house and distribute library collections. Academic libraries are dispersed geographically on some campuses among disciplines and groups of disciplines. The rationale frequently offered for department-based libraries is the convenience of location to the users. The present study contains relevant data to aid campus administrators in such a decision--specifically, which departments will be adversely affected should collections be split? For example, although the nursing collection is of obvious interest to nursing students, administrators must bear in mind whether other disciplines use the collection, and to what extent.

Review of the Literature

Studies of the use of library collections have tended to be nonspecific by discipline or subject category. More often than not, the analysis consists of simply counting the number of uses by subject area within a time frame, and comparing these uses. In the broader interests of library administration, few generalizations are attempted or offered.

Burns (1976) divided the collections of a university library system in blocks according to Library of Congress classification groupings. The three most heavily-used blocks in terms of both absolute circulation count and coefficient of use (number of charges made by number of pieces available) were psychology (BF), the family (HG), and recreation (GV). He concluded that some parts of library collections received higher proportionate use than size alone would indicate. McGrath (1972) found that books matching specific course profiles received greater use than books that did not. Jenks (1976), in a study of the use of a university library, analyzed library circulation data to determine how much each academic department used the library.

The determination of the value of university library circulation data for library management and decision-making was addressed by Lubans (1973). His study used such data to analyze aspects of library use and non-use and types of library users. He was also interested in testing machine-readable circulation data as a resource for a variety of computer-based studies. A significant question emerged to what is use or non-use: use of materials in the library facility may not be reflected in the circulation data; library materials may be used but not checked out. He concluded that comparison of library book subjects with the major fields of library users was helpful in the process of book selection and budgetary allocation.

A positive correlation was found between the classes of books checked out for home use and the classes of books used in the library (Domas, 1978). Library circulation data were collected for one month in 1978; Domas found a significant positive correlation between out-of-library and in-library use by using the Pearson product-moment correlation formula. This is important because it is one of the attempts to link conclusions drawn from analyses of library circulation records to larger conclusions about the use of all collections, circulating and non-circulating.

Because variation in the circulation of university library books by subject area is partly but directly dependent on the academic program, McGrath (1972) investigated the relationships between characteristics of disciplines and the number of books checked out by students. He categorized the disciplines taught into hard/soft, pure/applied, and life/nonlife. With weak substantiation, he found that the "softer" the subject, the more books checked out in the subject. He asserted that his findings have implications in sociological understanding of the relationship between disciplines and library use, in formulating a rationale for library collection building, and in administrative budget allocations to subjects.

McGrath (1983) classified circulated books in a university library according to academic subject areas and student majors, and used those groupings to determine relative subject similarities in forty academic departments. He resorted to multidimensional scaling to compute a best-fit solution of the similarities in three dimensions for undergraduate circulation and two dimensions for graduates. The clustering of disciplines, using a three dimensional solution, is described, and implications are articulated for selection of library materials and retrieval of information from an on-line bibliographic catalog of library holdings.

Findings

Over the two year period, Fall 1980 through Fall 1982, book checkout declined 22%. History had the greatest decline in checkouts per student (-3.2 books per student). Other major areas with larger enrollments (greater than or equal to 100) and large declines in use (greater than or equal to -1) were: secondary education (-1.9); educational leadership (-1.6); English (-1.4); library science (-1.3); journalism (-1.2); nursing (-1.1); special education (-1.1); and political science (-1.0). The greatest declines for subject areas with over 1,000 checkouts were in the areas of political science (-39%) and education (-36%). The only increases found in subject areas with over 1,000 checkouts were in mathematics-computers (3%) and criminal justice (1%). The high rate use was down .4 books per student; the light rate use was down by .7 books per student. The average rate of use for heavy use major areas was 5.2 books per student for light use major areas, the rate was 1.2 books per student. Enrollment in light use majors is increasing while enrollment in heavy use majors is declining slightly.

Heavy use major areas are dominated by the liberal arts, while light use major areas are dominated by utilitarian subjects. In the heavy use areas with pronounced decreases in book checkouts (history, educational leadership, and English), the decreases are not attributable to declines in graduate enrollments relative to total enrollments. Thus, the decreases in book checkouts occur regardless of the level of the academic program.

In terms of gross library book checkouts, the following book subject areas were most heavily used:

Language and Literature	7379, or 17.70% of total checkouts
Economics and Management	7201, or 13.11% "
Nursing	4613, or 8.40% "
History	4485, or 8.16% "
Psychology	3449, or 6.28% "
Education	3176, or 5.78% "

Geology students read geography books, but geography students did not read geology books. Counseling students read nursing, psychology, and sociology books. Psychology students read psychology and nursing. Although economics students in the undergraduate Arts & Sciences program read 9.8 books per student, economics students in the Business Administration program read only 2.1 books per student. At the Master's level, Arts & Sciences economics majors read 6.7 books per student, while Business economics majors read only .2 books per student. French students read language and literature, education, philosophy, and finance-insurance. German students read history, language, and literature. Classics students read language, literature, and art. Health administration students read nursing (67%), and economics-management-accounting (16%). Nursing students read nursing (35%), medicine (11%), and psychology (10%).

Implications

Declines in library book checkouts may be related to a decrease in the number of volumes acquired per year by the university library. 57,000 volumes were acquired by the library in the 1972-73 academic year, compared to 20,000 volumes in the 1981-82 academic year. The acquisitions rate has steadily declined as the buying power of the dollar has diminished. There is less of the current publishing output available on the library shelves as well as fewer retrospective purchases to fill gaps in historical collections. Today's students are more likely not to find and checkout needed books, particularly currently published materials, than were their predecessors. There are several factors that lead to questions regarding this presumption, however. First, declines in checkouts are evident among undergraduates whom, it may be supposed, should be focusing on more basic literature, rather than seeking material representative of the cutting edge of their disciplines. Undergraduates generally do not seek the unusual or esoteric. Moreover, declines in book checkouts occur in almost all subject areas. It can be assumed that none of the subject areas would be more adequate or up-to-date than any others. Or, it is highly probable that a relatively level rate of decline in checkouts would occur throughout the disciplines taught, studied, and reflected in the collections of the university library.

Declines in library book checkouts may be related to curriculum changes. As more emphasis is placed on measuring achievement with such instruments as Regents' tests, the curriculum may adapt to more "subjective" measures such as term papers. Also, in areas where enrollments are static or decreasing, such as the liberal arts, there may be pressure to avoid subjective measures of achievement (term papers) in order to justify grading and attrition patterns.

Then, too, in major areas facing retrenchment, there may be a tendency to reduce the difficulty of courses so that students will not be lost to other majors perceived as being less difficult. Conversely, major areas which enjoy expanding enrollments, such as business and other vocational areas, may have more students than they can handle, so a reduction of library use projects such as term papers may occur, as these projects require more grading time from the instructor.

Declines in book checkouts may be related to universal factors such as decreasing print literacy and the availability of other sources of information, such as television, computers, etc. Teachers may be adjusting their course requirements to reflect the expectations and limitations of their students. Students may be abandoning linear types of information and entertainment for more instantaneous forms. So much information may be available so quickly that efforts must be made to reduce the intake of some forms of information such as books, as they are slower to produce and process. An argument in favor of a universal factor affecting book checkouts would be a comparison of checkouts in other libraries in the same metropolitan area.

The municipal public library, for example, exhibited a decline in checkouts of 9.4% from 1980-81 to 1981-82. This decline is even more dramatic when it is noted that during the latter period, the public library opened an expanded, modern central library building. The opening of a new library building usually presages increased use of collections and services. The other state-supported university within the same city experienced a 2% decline in recorded statistics for book checkouts between the two years of comparison.

Table 1

Matrix of Number of Library Book Checkouts by Selected Major Fields of Study and Book Subject Areas

	PHILO	PSYCH	HISTO	ECNGA	FIINS	SOCIO	CRIMI	EDUCA	MUSIC	ARTSO	LGLIT	NCOMP	NURSE	TECHN	TOTAL	STUDENTS
AC	33	37	126	934	122	51	99	36	12	12	205	157	58	55	2035	1290
BIO	11	9	56	9		18	6		1	16	123	12	77	23	523	323
CPS	37	218	15	57	6	143	73	44	8		43	4	318	15	1025	437
CRJ	16	27	35	67	8	58	894	6		2	33	6	47	2	1267	241
EAS		35	9	18		15	8	159	4	1	17		35		327	202
EC	30	6	32	587	106	11	19	3	3	3	40	40	7	18	935	169
ECE	21	15	17	14	3	27	26	162	8	16	117	11	29	12	541	471
EDL	30	325	61	305	1	210	27	675	3	3	278	34	124	49	2298	430
ELE	5	37	4	2		8	10	76		14	31	23	3	2	227	136
ENG	72	29	78	14		44	3	65	16	32	1003	5	43	11	1478	231
FI	17	20	48	227	163	26	1	5		17	83	117	21	48	912	686
GS	8	3	29	15	4	17	34			11	52	6	9	5	230	169
HIS	55	4	466	42	1	73	7	25	7	12	90		15	5	904	147
HRT	1	6	25	15	9	5	7	3			15	1	8	17	130	123
IS	47	28	166	251	31	37	77	13	15	23	188	374	55	67	1518	1158
JOU	61	24	102	70	13	35	39	8	16	11	336	7	41	29	866	466
LSM		5	6	1		4		29	7	5	69		11	6	180	104
MCE	16	38	36	2		29	6	160	1	12	93	20	19	9	509	273
MGT	41	48	65	456	36	82	36	9	5	15	105	27	78	42	1174	1137
MK	14	24	50	393	30	8	27	6	5	15	85	27	37	48	872	744
MT	3	2	9	1		2			2	11	16	2	66	1	148	119
MTH	23	17	34	4	5	17	11	51	9		94	209	25	16	552	242
MUS	19	5	6	1		6	8	19	331	5	76	18	2	15	519	200
NUR	33	149	53	75		111	87	51	1	20	119	11	513	15	1467	900
PED	6	29	17	16	4	3	3	60		8	5		86	16	555	191
POL	28	5	148	95	3	41	47	4	8	19	129	2	16	18	770	190
PSY	147	904	95	173	12	258	147	74	8	27	266	44	760	32	3180	587
PTH	6	12	6	13		8	15	14			9		107	8	257	142
SEE	23	52	115	20	1	69	46	144	4	13	392	9	21	7	1062	408
SOC	20	12	10	24		79	97	2	7	4	79	2	13	4	376	111
SPE	2	37	1	25	1	44	56	171	1	11	46		143	11	595	433
STU	32	24	76	10	9	1	20	16	10	617	198	4	5	122	1223	340
TAX		6		6	23	5	3			4			3		57	115
VCD		31	20	99		41	8	49	1	4	31	5	16	7	338	160
Total	1935	3449	4485	7201	1107	2976	2963	3176	1174	2002	9379	2249	4613	1639	54947	21187

Table 2

Matrix of Number of Library Book Checkouts Per Students by Selected Major Fields of Study and Book Subject Areas

	PHILO	PSYCH	HISTO	ECNGA	FIINS	SOCIO	CRIMI	EDUCA	MUSIC	ARTSD	LGLIT	MCOMP	NURSE	TECHN	TOTAL	N
AC			.1	.7	.1		.1				.2	.1			1.6	1290
BIO			.2			.1					.4		.2	.1	1.6	323
CPS	.1	.5		.1		.3	.2	.1			.1		.7		2.3	437
CRJ	.1	.1	.1	.3		.2	3.7				.1		.2		5.3	241
EAS		.2		.1		.1		.8			.1		.2		1.6	202
EC	.2		.2	3.5	.6	.1	.1				.2	.2		.1	5.5	169
ECE						.1	.1	.3			.2		.1		1.1	471
EDL	.1	.8	.1	.7		.5	.1	1.6			.6	.1	.3	.1	5.3	430
ELE		.3				.1	.1	.6		.1	.2	.2			1.7	136
ENG	.3	.1	.3	.1		.2		.3	.1	.1	4.3		.2		6.4	231
FI			.1	.3	.2						.1	.2		.1	1.3	686
GS			.2	.1		.1	.2			.1	.3		.1		1.4	169
HIS	.4		3.2	.3		.5		.2		.1	.6		.1		6.1	147
HRT			.2	.1	.1		.1				.1		.1	.1	1.1	123
IS			.1	.2			.1				.2	.3		.1	1.3	1158
JOU	.1	.1	.2	.2		.1	.1				.7		.1	.1	1.9	466
LSM			.1					.3	.1		.7		.1	.1	1.7	169
MCE	.1	.1	.1			.1		.6			.3	.1	.1		1.9	273
MGT			.1	.4		.1					.1		.1		1.0	1137
MK			.1	.5							.1			.1	1.2	744
MT			.1							.1	.1		.6		1.2	119
MTH	.1	.1	.1			.1		.2			.4	.9	.1	.1	2.3	242
MUS	.1							.1	1.7		.4	.1		.1	2.6	200
NUR		.2	.1	.1		.1	.1	.1			.1		.6		1.6	900
PED		.2	.1	.1				.3					.5	.1	2.9	191
POL	.1		.8	.5		.2	.2			.1	.7		.1	.1	4.1	190
PSY	.3	1.5	.2	.3		.4	.3	.1			.5	.1	1.3	.1	5.4	587
PTH		.1		.1		.1	.1	.1			.1		.8	.1	1.8	142
SEE	.1	.1	.3			.2	.1	.4			1.0		.1		2.6	408
SOC	.2	.1	.1	.2		.7	.9		.1		.7		.1		3.4	111
SPE		.1		.1		.1	.1	.4			.1		.3		1.4	433
STU	.1	.1	.2				.1			1.8	.6			.4	3.6	340
TAX		.1		.1	.2										.5	115
VCD		.2	.1	.6		.3	.1	.3			.2		.1		2.1	160
Total	.1	.2	.2	.3	.1	.1	.1	.1	.1	.1	.4	.1	.2	.1	2.5	19605

Table 3

Matrix of Percent of Library Book Checkouts by Selected Major Fields of Study and Book Subject Areas

	PHILO	PSYCH	HISTO	ECMG	FIINS	SOCIO	CRIMI	EDUCA	MUSIC	ARTSD	LGLIT	MCOMP	NURSE	TECHN	TOTAL	STUDENTS
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
AC	2	1	3	13	11	2	3	1	1	1	2	7	1	3	4	6
BIO	1		1			1				1	1	1	2	1	1	2
CPS	2	6		1	1	5	2	1	1				7	1	2	2
CRJ	1	1	1	1	1	2	30						1		2	1
EAS		1				1		5					1		1	1
EC	2		1	8	10		1					2		1	2	1
ECE	1					1	1	5	1	1	1		1	1	1	2
EDL	2	9	1	4		7	1	21			3	2	3	3	4	2
ELE		1						2		1		1				1
ENG	4	1	2			1		2	1	2	11		1	1	3	1
FI	1	1	1	3	1	1				1	1	5		3	2	3
GS			1			1	1			1	1					1
HIS	3		10	1		2		1	1	1	1				2	1
HRT			1		1									1		1
IS	2	1	4	3	3	1	3		1	1	2	17	1	4	3	5
JOU	3	1	2	1	1	1	1		1	1	4		1	2	2	2
LSM								1	1		1					
MCE	1	1	1			1		5		1	1	1		1	1	1
MGT	2	1	1	6	3	3	1			2	1	1	2	3	2	5
MK	1	1	1	5	3		1			1	1	1	1	3	2	4
MT										1			1			1
MTH	1		1			1		2	1		1	9	1	1	1	
MUS	1							1	28		1	1		1	1	1
NUR	2	4	1	1		4	3	2		1	1		11	1	3	4
PED		1						2					2	1	1	1
POL	1		3	1		1	2		1	1	1			1	1	1
PSY	8	26	2	2	1	9	5	2	1	1	3	2	16	2	6	3
PTH							1						2			1
SEE	1	2	3			2	2	5		1	4				2	2
SOC	1					3	3		1		1				1	1
SPE		1				1	2	5		1			3	1	1	2
STU	2	1	2		1		1	1	1	31	2			7	2	2
TAX					2											1
VCD		1		1		1		2							1	1
Total N	1935	3449	4485	7201	1107	2976	2963	3176	1174	2002	9379	2249	4613	1639	54947	21187
% Total	4	6	8	13	2	5	5	6	2	4	17	4	8	3		

Table 4

Matrix of Percent Change of Library Book Chackouts from 1980 to 1982

By Selected Major Fields of Study and Book Subject Area

	PHILO	PSYCH	HISTO	ECNGA	FIINS	SOCIO	CRIMI	EDUCA	MUSIC	ARTSD	LGLIT	MCOMP	NURSE	TECHN	TOTAL	N
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
AC	-43	-70	-24	5	-34	-49	14	-27	-48	-59	-17	87	-41	8	-17	-7
BIO	-65	-50	-29	-71	-100	-38	20	-100		700	60	-48	196	-44	-27	-12
CPS	28	-28	150	-41		-30	-38	-53		-100	-20		1	650	-21	12
CRJ	-33	8	-83	-42	167	-47	36	-67	-100	-67	-40			-83	-18	-8
EAS	-100	250	29	-36	-100	36	700	-19			13	-100	218	-100	-10	-7
EC	25	-57	-16	53	-53	-50	-10				3	100	75	157	9	-12
ECE		-88	-73	-73	-40	-63	-16	-50	60	-56	-35	-42	-33	-52	-51	-23
EDL	-76	-39	-21	-11	-91	12	-4	-17	50	-81	30	-56	-27	48	-21	2
ELE	-55	-37	-64	-95	-100	-78	-29	-74	-100	600	-54	667	-91	-87	-65	-56
ENG	-6	-28	-50	-56	-100	5	70	110		146	-20	67	169	267	-16	3
FI	31	100	9	-16	37	24	-95	-64		89	-10	65	50	45	9	25
GS	-70	-90	-77	-76	100	47	6	-100	-100	-54	-67	-50	-36	-75	-65	-40
HIS	-20	-33	-22	-53		-28	-46	56	600	-63	-42			-69	-31	5
HRT			733	-25				200		-100	-25				60	81
IS	31	17	75	3	-68	-48	114	-52	400	92	9	41	-13	-35	10	87
JOU	126	-14	-51	-20	333	-58	-35	-65	100	-35	6	75	-9	-47	-20	31
LSM	-100	-17		-98		-50	-100	-12	40	-29	-19	-100	38	-54	-44	-2
MCE	129	138	-36	-80		142	50	-14	-83	50	7	-5	12	200	2	53
MGT	64	-63	-68	-40	-60	-15	29	-76	-64	-42	-28	-36	66	-55	-41	3
MK	-61	-66	-51	-5	-40	-82	-21	-84	-17	88	-46		48	-24	-26	-1
MT	-70	-50	-31	-67					100	1000	-60	-90	69	-93	-35	9
MTH	667	750	-23	-82	-38	55	-21	50	800	-100	92	35	47	-6	29	38
MUS	111		-75	-96	-100	50		217	49		73	-65	-50	36	16	25
NUR	-53	10	-41	-34		-53	21	2	-50	223	-13	3	27	-38	-17	44
PED	-45	-22	-61	60		-92	-82	-6	-100	100	-86		-5	33	-18	-15
POL	-44	-75	40	32	-90	-51	262	-20	100	375	22	-75	-68	-18	-29	-10
PSY	-7	32	-45	47	-29	-1	-34	3	-58	-37	23	238	13	433	2	5
PTH	-50	-8	20	-7		-43	650	367	-100		-74	-100	-34	14	-21	-3
SEE	-67	-22	-46	-71	-83	-22	119	-51	-83	8	-60	-86	-19	-36	-50	-14
SOC	-60	-69	-77	243	-100	-63	288	-88	250	-20	27	-33	-78	33	-37	-21
SPE	-92	-37	-96	-53		83	-61	-50	-90	83	-63	-100	-42	-48	-49	-7
STU	3	-23	-26	-33		-96	-29	45	100	-14	3	100	-89	-19	-19	-4
TAX			-100	-77	229	400		-100			-100	-100		-100	-43	14
VCD	-100	19	-20	24		64	700	-73			55		23	17	-14	-19
Total	-22	-17	-30	-21	-26	-29	1	-36	-13	-19	-21	3	-11	-20	-22	5

References

Brown, N. B., & Phillips, J. Price indexes for 1982: U. S. periodicals and serial services. Library Journal, 1982, 107, 1379-1382.

Burns, R. W. A comparative study of changes made through an automated circulation system in the Colorado State University Libraries. Boulder, Colorado: Colorado State University. (ERIC Document Reproduction Service No. ED 139 526)

Domas, R. E. Correlating the classes of books taken out and books used within an open-stack library: Research Report. San Antonio, Texas: San Antonio College. (ERIC Document Reproduction Service No. ED 171 232)

Jenks, G. M. Circulation and its relationship to the book collection and academic departments. College & Research Libraries, 1976, 37, 145-152.

Lubans, J., Harper, W. A., & Frishman, R. E. A study of computer-based circulation data of the non-use and use of a large academic library: Final report. Boulder, Colorado: University of Colorado Libraries. (ERIC Document Reproduction Service No. ED 082 756)

McGrath, W. E. The significance of books used according to a classified profile of academic department. College & Research Libraries, 1972, 33, 212-219.

McGrath, W. E. Multidimensional mapping of book circulation in a university library. College & Research Libraries, 1983, 44, 103-115.

Title output and average prices, 1982: Preliminary figures. Publisher's Weekly, March 11, 1983, pp. 46; 223.